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TECH TIP

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How it Works: Pressure Switches

Air conditioning systems use pressure switches to regulate the pressure from within the system and serve the purpose of preventing component failure. Below are descriptions of some of the most common pressure switches.

Low Pressure Cut Out Switch (LPCO)

The LPCO is used to shut off the compressor if the air conditioning system drops below a certain pressure, indicating there is not enough refrigerant. It works by

creating an open circuit to the electrical power supply that runs to the compressor and helps prevent compressor damage. The LPCO is wired in series to the circuitry.

High Pressure Cut out Switch (HPCO)

The HPCO is used to protect the system from excess pressure. If it senses the

pressure in the system is too high, it will create an open circuit to the electrical

power supply running to the compressor to prevent damage. The HPCO is wired in series to the circuitry.

High Pressure Relief Valve (Pop off valve)

These were quite common in early vehicles. They are located in the receiver drier, compressor and/or hoses and look like a raised round dot. High pressure relief valves are designed to release refrigerant into the atmosphere if the pressure in the system gets too high. They work via a series of internal springs. Once the pressure in the system returns to normal, the springs close.

Compressor Cycling Switch

The compressor cycling switch is used to control the compressor clutch and senses the pressure on the low side of the system, switching the compressor on when needed.

Fan Switch

This operates in the medium pressure range and is used to turn on/off the

condenser fan while the air conditioner is operating.

Thermo limiting Switch

This superheat switch has a fuse that will melt at a certain pressure. It works by

creating an open circuit to the electric power supply that runs to the compressor and prevents damage.